



Designed & Manufactured in Spain (EU)

ebikemotion®

SMART CONTROL

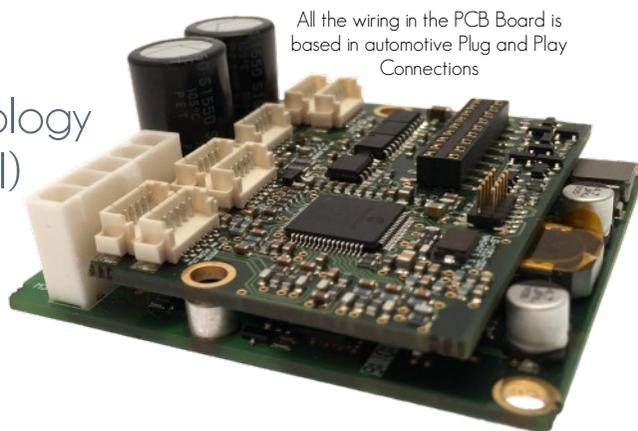
Smart Motor Controller for MID and HUB

The Motor Controller is the most important element in the e-bike and is full responsible of the system performance. It processes sensors information and drive the power supplied to the motor. We have developed the "SMART MOTOR CONTROL" using the experience and know-how of Nagares in harsh environment power electronics, to give market response to the demand of High Level solutions, fully customizable and with open architecture to be integrated in quality e-bike systems. Based in CAN BUS, our Smart Controller processes rapidly the inputs and supply fast response adopting different customizable motor maps for each power level. Full designed and produced in Europe to give the best quality at the best price.

Target Applications:

- BLDC Motors in electric bicycles or tricycles
- HUB Motors with External Controllers
- MID DRIVE or HUB Motors with build in Controller

Double Level Topology (Power+Control)



All the wiring in the PCB Board is based in automotive Plug and Play Connections

With new MOSFETs technology and high efficiency algorithms, our motor controller consumes between 15% and 20% less than our competitors. That is innovate

By using the same technology that our company uses in standard and electric vehicles, we obtain responsiveness, reliability and efficiency results absolutely novel in the e- bike market. Our analysis shows less self-heating and lower consumption, around 15 and 20% more efficient than competitors.

The Ebikemotion® Technologies Brushless controller is suitable for 48 volts and 36 volts brushless sensed motors that are used in electric bikes. The system works with brushless motors that include Hall sensors.

The controller integrates a high speed CAN bus, to communicate with external LCD Displays, Smart BMS or other devices and two SERIAL interfaces to communicate with devices that works with simpler protocols

EN 15194
DIN EN ISO 13849
According to Directive 2006/42/EG

Made with Automotive Quality Standards

e-bike Motor Controller

HEADQUARTERS

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RESEARCH CENTERS

BISITE R+D Group
(University of Salamanca)

GND (NAGARES)
(Valencia - Spain)

STAGEMOTION SL
(Palencia - Spain)

PRODUCTION CENTER

NAGARES S.A.
(Motilla del Palancar - Spain)

GRUPELEC (NAGARES)
(Valladolid - Spain)

Nagares SA one of the most important Automotive Electronic Manufacturers of Spain and the R+D in GND (Valencia) is the responsible of the design, production and quality management of the SMART CONTROL



Product Features and Specifications



Dynamic Grip Control

System that dynamically adjust the engine power in case of loss of tire grip. (Customizable by APP).



Intelligent Power Map

Server side analysis of user's performance e-bike data to improve and optimize the efficiency of engine maps to supply the optimum configuration online.



Power Map Customization

Custom Fit power maps in each of the power levels. (Customizable by APP).



Special Coding Adjustment

Supports special settings via "coding" to use the same controller with slight differences for different e-bike models (eg. Wheel size, number or power levels, etc.)



Main Power Adjustment

Adjusting the overall percentage of maximum power supplied to the motor on available at each level of power assistance (Customizable by APP).



Historical Power Consumption

Statistical average consumption watt/hours per activity. Customizable data for periods of time. Key data to calculate the Range. (Accessible via APP).



High Efficiency Architecture

Advanced design of Hardware and Software of motor control to increase efficiency and reduce consumption without losing motor power.



High Performance Assembling

Automation of assembly process to minimize product failure rate. 100% pick & place without the use of mechanical fasteners



Double Level Topology

Separation of power and control layer to scale the architecture to other powers or mechatronic designs



Error Management System

Error Management System that stores a list of historical errors inside the Smart Motor Controller and also in the server side with details about the time that have occurred (accessible via APP and Diagnosis CAN)



Open Connect Architecture

Open cabling system tailored to customer needs. All connections connectors based automatic seamless PCB (No welding)



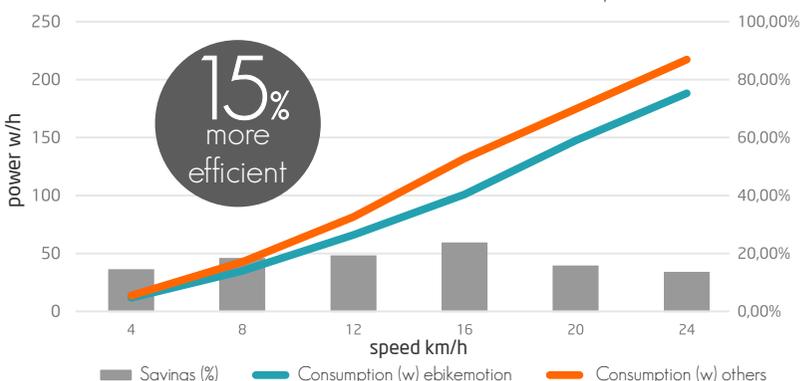
Updatable by Bluetooth & CAN bus

Upgradeable firmware via CAN BUS or Bluetooth® connection, allowing remote management and updates of any new improvement.

ebikemotion & innovation

Creating a motor controller smart and 15% more efficient is innovate. The Smart Motor controller is possible to be controller by any iWoc® remote system, even by the iWoc® ONE (Just ONE button)

ebikemotion Smart Controller Consumption



IAP (in APP) Historical Power Consumption

